

What is claimed is:

## CLAIMS

1. A communication session management method for providing a  
5 transmission service having a plurality of service-levels, each service-level being  
associated with a separate quality-of-service (QOS), the method comprising:

preparing data for transmission at one of the plurality of service-levels  
by uniquely associating a service-level encryption key with said one of the plurality  
of service-levels;

10 encrypting said data with said service-level encryption key to form  
encrypted data uniquely associated with said one of the plurality of service-levels;  
and

transmitting said encrypted data uniquely associated with said one of  
the plurality of service-levels to users entitled to said one of the plurality of service-  
15 levels.

2. A method according to claim 1 and also comprising the step of:  
distributing to the users entitled to said one of the plurality of service  
levels decryption key derivation information for decrypting said encrypted data.

3. A method according to claim 2 and wherein said decryption key  
derivation information is comprised in an entitlement control message (ECM).

4. A method according to claim 1 and wherein said plurality of service-  
25 levels are hierarchical according to a QOS hierarchy.

5. A method according to claim 4 and wherein each one of the plurality  
of service-levels includes an indication of at least one of the following: a data  
transmission bandwidth; a number of users that may concurrently connect to the  
30 transmission service; a set of transmission applications served; a type of downgrade

support to a service-level lower in the QOS hierarchy; a type of disconnect-on-idle operation; and a determination of a Web server to connect to.

6. A method according to claim 1 and also comprising the steps of:  
5 determining that communication load at said one of the plurality of service-levels exceeds a threshold; and  
downgrading to an available service-level that is lower in the QOS hierarchy than said one of the plurality of service-levels.

10 7. A method according to claim 6 and wherein said downgrading step is supported in one of the following modes: an automatic mode; and a mode in which downgrade is made upon confirmation of a user.

8. A method according to claim 6 and wherein said downgrading step  
15 comprises:

identifying the available service-level that is lower in the QOS hierarchy than said one of the plurality of service-levels;

20 encrypting said data with an encryption key uniquely associated with said available service-level that is lower in the QOS hierarchy than said one of the plurality of service-levels to form encrypted data uniquely associated with said service-level that is lower in the QOS hierarchy; and

transmitting said encrypted data uniquely associated with said service-level that is lower in the QOS hierarchy to users entitled to said one of the plurality of service-levels.

25 9. A method according to claim 1 and wherein the transmission service comprises at least one of the following: a unicast transmission; and a multicast transmission.

30 10. A method according to claim 1 and wherein said users comprise at least one of the following: individual users; and users of an Intranet.

11. A method according to claim 1 and wherein said encrypting step is performed in the PID layer.

12. A method according to claim 1 and also comprising the step of enabling the users entitled to said one of the plurality of service-levels to decrypt said encrypted data according to service-level entitlements of the users.

13. A method according to claim 1 and wherein said data comprises at least one of the following: any type of computerized data; video information; audio information; and multimedia.

14. A method according to claim 13 and wherein said data comprises on-demand data.

15. A system at a headend for providing a transmission service having a plurality of service-levels, each service-level being associated with a separate quality-of-service (QOS), the system comprising:

a management unit for preparing data for transmission at one of the plurality of service-levels by uniquely associating a service-level encryption key with said one of the plurality of service-levels;

an encryptor operatively associated with said management unit and operative to encrypt said data with said service-level encryption key to form encrypted data uniquely associated with said one of the plurality of service-levels; and

a transmitter unit operatively associated with said management unit and said encryptor and operative to transmit said encrypted data uniquely associated with said one of the plurality of service-levels to users entitled to said one of the plurality of service-levels.

16. A system according to claim 15 and wherein said data comprises at least one of the following: any type of computerized data; video information; audio information; and multimedia.

5 17. A system according to claim 16 and wherein said data comprises on-demand data.

18. A system according to claim 15 and wherein each one of the plurality of service-levels includes an indication of at least one of the following: a data transmission bandwidth; a number of users that may concurrently connect to the transmission service; a set of transmission applications served; a type of downgrade support to a service-level lower in the QOS hierarchy; a type of disconnect-on-idle operation; and a determination of a Web server to connect to.